Developing AJN Network: Phase Two
An Information Resource for Nurses

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In September of 1993 the American Journal of Nursing Company was awarded a three-year Special Projects Grant from the Division of Nursing, Department of Health and Human Services to develop a national information service that would provide a variety of formal and informal continuing education services to nurses in medically underserved communities. AJN Network went "live" in March 1994 and our progress in our first year of operation was presented at SCAMC in 1994.

During the first year of operation, AJN Network was available through a dial in service. In September 1994 we became an Internet node. This presentation will detail our progress in Year 2 of the grant period, describing expansion of user base and content, new content offerings, initial stages of WEB development and plans for future development.

BACKGROUND

AJN Company has a tradition of providing education to nurses for over nine decades. It has a large and ever-increasing repository of clinical information. Since 1990, the company had been considering the feasibility of providing information and services to nurses in an electronic format. The proliferation of bulletin boards and Internet access by and for health care providers by 1993 indicated that the time was right to institute a national information service. Funding was sought and when the 1993 purposes for Special Projects Grants from the Division of Nursing, Department of Health and Human Services were examined, the section earmarked for grants designed to provide continuing education to nurses serving in medically underserved communities seemed uniquely appropriate for the type of resource we envisioned.

Grant proposal development began with a search of the literature that revealed a steady decline in the health of rural Americans [1, 2], the special demands placed on the rural nurse to be proficient in all areas [3, 4, 5], and the difficulties that rural nurses have in obtaining access to continuing education [5, 6]. A needs assessment questionnaire was developed and administered to key personnel in Area Health Education Centers (AHECs) across the country. This survey supported our literature findings and confirmed the need for the project.

Three states, North Carolina, Nevada and Wisconsin, agreed to participate as pilot states if the project was funded. These states were selected because of their enthusiasm for the project, their willingness to support a "train the trainer" approach to reach nurses in rural hospitals, and because rural nurses in those states did have access to computers and modems.

PROJECT OBJECTIVES

Based on the information gathered, the objectives of the project were developed as follows:

1. to develop a computer network system, reachable through personal computer modems, which will serve the needs of nurses on a national level;

2. to provide access for nurses to information that will assist them in providing effective nursing care, including direct patient care, management, and promotion of community health by

   a. establishing a nurse consultant help-line with expert nurses who will respond to specific inquiries from nurses;

   b. establishing a Bulletin Board system for nurses to ask their peers for answers to

specific nursing care and management questions and to share information;

c. making available AJN Co.'s library of patient information so that nurses can print this information directly for patients;

d. establishing a special consultation service on HIV/AIDS which will provide prevention information and increase the knowledge and skill of nurses caring for persons who are HIV positive or who have AIDS;

e. establishing a special consultation on sociocultural diversity for nurses to gain cultural competence which will assist them in providing care to members of diverse cultural groups;

3. to provide greater access for nurses to continuing education by

a. offering computer assisted instruction (CAI) programs on topics relevant to (and selected by) the users;

b. establishing a feature article of the month and a time during which nurses from anywhere can talk to the author through synchronous conferencing--the author can also respond to questions posted through the Bulletin Board;

c. offering on the network continuing education articles and tests which are available on a monthly basis in the *American Journal of Nursing, MCN, The American Journal of Maternal Child Nursing,* and other publications;

d. creating new continuing education course offerings from user input on the bulletin board;

4. to provide assistance to nurses in accessing the large, existing resources of healthcare information already available by

a. converting information from a variety of sources that currently exist in print format to searchable digital databases;

b. providing access to or information from existing digital databases available on the Internet and elsewhere;

c. establishing a special feature section that provides national and international news affecting nurses and healthcare in medically underserved areas.

ACCOMPLISHMENTS - YEAR 1

The proposal was approved and funded and the project was underway in September of 1993. Implementation began with the recruitment of remaining personnel for the project. Hardware and software were selected and content was identified and developed.

Software/Hardware Selection

A Macintosh hardware platform and Res Nova software was selected, along with RIPterm, a shareware terminal emulation program that provides communications software in Macintosh and DOS versions, and has a user-friendly, customizable graphical user interface.

Network Content

Much of the work in this first year of the grant was devoted to setting up the process, policies and procedures for putting content on AJN *Network* and to make that process as automated as possible. A learning needs assessment and suggestions from our Advisory Panel members determined the original content offerings. These included
- continuing education offerings in text and computer assisted instruction (CAI) format
- ten Forums (Medical/Surgical, Maternal-Child, Emergency, Gerontology, Psychiatric/Mental Health, Rural Health, Administration/Management, HIV/AIDS, Medications and Cultural Issues
- a nursing consult area
- two databases: a list of nursing organizations and a list of nursing conferences supported by a full text Apple search engine
- a news area that included segments from Nurse Executive Newscan,
- patient information sheets on a variety of topics

107

ACCOMPLISHMENTS - YEAR 2

Accomplishments in Year 2 included hardware and software upgrades, establishment of our Internet node, an upgrade from 56k to a T1 service and Web development. Additions to content established in Year 1 include additional Forums, databases and continuing education materials along with several new areas and offerings.

Forums

Forums continued to be our most popular and active area of AJN *Network*. In response to requests from our users, Home Health, Nutrition, Grants and Funding, Clinical Resources, Ethical and Legal Issues, and Technology Forums were developed. Several sub-areas were also added to existing Forums. For example, from the Medical-Surgical Forum, you can access Forums on Critical Care, Pain Management, Physical Therapy, Neuroscience, and Hospice. The Psychiatric-Mental Health Forum area contains two sub-forums, one on adult and one on child psychiatric/mental health problems. The Technology Forum contains five sub-areas: Informatics, and four areas that originally existed on E.T. Net, a bulletin board managed by Dr. Susan Sparks from the Educational Technology Branch of the National Library of Medicine. When Dr. Sparks moved from the Educational Technology Branch to Extramural Programs, we requested and were granted permission to transfer the technology forums to AJN *Network*. Forum areas entitled Hardware, Shareware, NUCARE, and AVLINE were re-instated on AJN *Network*.

A new forum titled "Hot Topics" was instituted for discussion of important and timely areas of interest to nurses and the profession. *AJN* journal editors incorporate content and comments from this forum in a new journal column devoted to AJN *Network*.

Forums continue to be moderated by a wonderful group of dedicated nurses who volunteer their time. On-line meeting are held monthly in the lobby area of AJN *Network* to orient new moderators, discuss ways to increase user participation, and a variety of other network issues.

Databases

Two new databases were added to the database area in Year 2: a Licensure database that provides the address for the Board of Nursing of each state and includes continuing education requirements for relicensure; and a Certification database that contains the name and address of all the agencies/ organizations that certify advanced practice nurses and includes the eligibility requirements to sit for the certification exam. There are plans to expand the original Nursing Organization database with more information about goals, purposes and special interest groups within the organization. A database of health-related organizations is also under development.

A nursing education subset of AVLINE, the audiovisual database from the National Library of Medicine, was placed in the Technology Forum area. Users can discuss the content of nursing audiovisual materials and how they are using them in the AVLINE Forum.

Another innovative addition to the Database area is a Search Support Forum moderated by a very experienced librarian, Margaret Allen, MLS, our new editor of *International Nursing Index*. Ms. Allen's Forum is a place where nurses can ask for help in using any database and get hints for identifying appropriate search terms as well as ways to narrow or expand a search strategy.

Continuing Education

More text based continuing education offerings were added in Year 2, along with one full CAI program and several CAI demo programs. The demo programs selected for inclusion on AJN *Network* function just as the full programs do, but do not contain all the areas of content. Several companies have provided us with demo programs and discussions are ongoing with other developers of exemplary nursing software.

Journal Club. We believe it is not sufficient to just convert print materials to an electronic format. Each medium has its own characteristics and strengths that should be matched to the content. Journal Club was created to put this concept into practice.

Journal Club has three areas: a place where selected articles are available for users to download and read; a forum where authors respond to questions about their articles; and a "chat" area where, on a specified date and time, the author will be present for a "live" discussion. AJN *Network* can currently support 103 simultaneous users in chat mode.

AJN Company's journal editors have been working with Project Staff to identify authors who might participate in "Journal Club." We have a "Journal Club" for each of AJN Company's journals: *American Journal of Nursing, MCN, The American Journal of Maternal Child Nursing,* and *Nursing Research* and for the *Journal of Emergency Nursing.* We are pursuing relationships with other journals and nursing organizations who may also want to establish a "Journal Club" with their own authors and articles.

New Plans for Continuing Education. We are also working with our Continuing Education (CE) Director to offer CE credit for participation in "Journal Club" and to develop new electronic CE offerings created from discussions in forums on topics that are innovative, timely and generate significant interest.

An additional innovative plan is a participatory continuing education (CE) offering. Authors would develop an outline that is approved by our CE Director. The author would post a few paragraphs of content at the beginning of each week and ask participants to respond to that information by posting related questions or offering information (for example, their experiences caring for patients with the problem under discussion). At the end of each week the author would summarize, then move on to a new subtopic the following week. This process would continue for 3 to 4 weeks culminating with a final evaluation. This approach would enable users to be active participants in their own learning. These new CE approaches will be developed fully in Year 3.

NEW YEAR 2 OFFERINGS

Internet Resources

Additional information available over the Internet has been added in Year 2. For example, we are providing telnet access to NLM

Locator, an on-line catalog of the National Library of Medicine's books, audiovisuals and journal titles.

We are also echoing several Internet Listservs and Usenet groups. Current Listservs related to nursing include NurseNet, Nrsing-l, SNurse-l, GradNurse and NurseRes. Usenet groups comprise not only nursing, but also some that focus on health-related topics including alt.npractitioners, alt.abuse.recovery, alt.infertility, alt.adoption, sci.med.nursing, sci.med.aids, sci.med.immunology, sci.med.diseases.cancer, sci.med.informatics, sci.med.telemedicine, sci.med.pharmacy, sci.med.occupational therapy, sci.med.transcription, and sci.med.vision. As other valuable Internet resources are identified, they will also be echoed. A comprehensive list of healthcare resources on the Internet developed by Mr. Lee Hancock will be posted in organized subsets by topic.

An agreement has been reached with Physician's GenRx, a database of drugs listed by their generic name, to allow AJN *Network* users to access this database for one month free of charge and at a 15% discount thereafter.

Virtual Conference Center

An idea to establish an area for reporting about conferences originated when the Project Coordinator attended the National Rural Health Conference. Every evening, she posted a message describing presentations and key issues that were discussed. This area instantly became a popular place on the Network. We saw this as another excellent way to provide timely information to those who cannot attend major nursing conferences. Our first "Virtual Conference" was the MCN Convention, followed by the Rutgers Nursing Informatics Conference, the Duke University Computer Conference, the National League for Nursing Convention and Interactive Healthcare '95. For some conferences, reporters were assigned to summarize presentations, describe audience reactions and interview attendees. Abstracts of presentations are posted prior to the conference and users can post messages to the presenters and engage in a synchronous "chat" with some of the presenters a few weeks after the conference has occurred. Users have responded favorably to this new offering.

Nursing Organizations

We recently offered to set up an area of the network for nursing organizations. They can have a forum to discuss organizational issues, a file library, and a "meeting room" for on-line meetings. Several regional nursing computer groups and nursing organizations quickly became a part of AJN *Network*, and many more are learning to use the network so they can also take advantage of this opportunity.

World Wide Wed Development

Our early efforts at Web development have focused on three areas: articles from our Journals with on-line submission of CE tests; the *AJN Career Guide*, with a search feature for locating hospitals who are recruiting nurses;and content from out Multimedia Catalog, complete with video clips of a few of our videotape offerings. These have been rudimentary efforts to experiment with HTML markup, formatting of documents, and experimentation with still and motion images.

EXPANSION OF USER BASE

The Project Coordinator originally introduced AJN *Network* using a train-the-trainer approach in several sites in the three pilot states. After the initial sessions, those individuals became the trainers and went on to train their colleagues who, in turn, trained their peers. In September of 1994 we established our Internet node and announced our Internet access on various nursing listservs. We also demonstrated the network at conferences across the country. As a result, we have had a steady influx of new users. As of August 1, 1995 there were over 3300 registered users on AJN *Network*, many from outside of the United States. We are averaging 12 new users per day and are logging approximately 100 calls per day. Our busiest days are Tuesdays and Thursdays, and the busiest times are 9AM to 1PM Eastern time.

FUTURE PLANS

In Year 3 a Res Nova software upgrade will provide a Windows client with built in Web Browser software. This will spur further World Wide Web development and incorporation of digitized audio, still images, and motion images. We will devote considerable time to developing relationships with other Internet resources for nurses.

We also plan to have a primary content focus for each month in Year 3. September will feature emergency nursing with planned activities that include: the Emergency Nursing Association (ENA) Conference in the Virtual Conference Center; training on AJN *Network* offered at the ENA Conference; having the President of ENA as an on-line guest speaker; featuring an article on emergency nursing in Journal Club; and posting CE articles for the *Journal of Emergency Nursing*.

We are exploring the possibility of developing a game that can be played in real time by two or more AJN *Network* users. The plan is to announce weekly or monthly winners, and offer users an opportunity to add questions to the game. We see the game as a vehicle to entice users to log onto the network on a regular basis.

Considerable time will be devoted to evaluation in Year 3. We will do formal surveys and analysis of our users and their use of the various content areas of AJN *Network*. Guided by an eminently qualified Advisory Committee, and in response to continued surveys that are conducted on the network, AJN *Network* will continue to add new resources and endeavor to meet the information needs of nurses throughout the world. At the conclusion of the grant period AJN *Network* will be offered as a subscription service to generate revenue for continued development.

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